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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

APPEAL BRIEF

Ex parte Yoshimi ISHIBASHI

ANTIFALSIFICATION RECORDING PAPER AND PAPER SUPPORT THEREFOR

Serial Number: 09/900,979
Filed: July 10, 2001
Group Art Unit: 1774
Examiner: T. Dicus

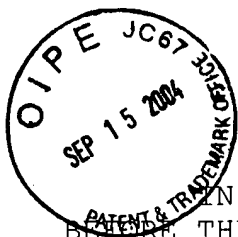
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Date: September 15, 2004

Atty. Docket No. SAE-024



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

Appl. No. : 09/900,979 Confirmation No. 6945
Applicant : Yoshimi ISHIBASHI et al.
Filed : July 10, 2001
TC/A.U. : 1774
Examiner : T. Dicus
Dkt. No. : SAE-024
Cust. No. : 20374

BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 15, 2004

Sir:

This is an appeal from the decision in the Office Action dated May 5, 2004, of the Examiner rejecting claims 1, 6-14, 16, 19-20 and 25-33 in this application.

This appeal is the second appeal in the application. A first appeal was filed in this application on October 17, 2003. An appeal brief was filed in the first appeal on January 20, 2004. In response to the arguments in the appeal brief, the Examiner issued the Action of May 5, 2004, in which the the finality of the previous rejections of claims 1, 6-14, 16, 19-20 and 25-33 was removed and new grounds of rejection of these claims were made.

Appellant respectfully requests that the rejections of the claims be reviewed and reversed.

(1) REAL PARTY IN INTEREST

The real party in interest is Oji Paper Co., Ltd. of 7-5, Ginza 4-chome, Chuo-ku, Tokyo-to, Japan

(2) RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

(3) STATUS OF CLAIMS

Claims 1, 6-14, 16, 19-20 and 25-33 are pending in this application. Claims 2-5, 15, 17-18 and 21-24 have been canceled. Claims 1, 6-14, 16, 19-20 and 25-33 are appealed. Claims 1, 6-14, 16, 19-20 and 25-33 as rejected appear in the attached Appendix.

(4) STATUS OF AMENDMENTS

Claims 1, 7 and 20 were amended in a paper filed August 4, 2004.

(5) SUMMARY OF INVENTION

The present invention is an antifalsification recording paper in which a heat-sensitive recording layer is provided on a paper

support in which a ribbon-shaped security element is embedded. The present invention is also a paper support for an antifalsification recording paper

Recently, thermal recording materials including a heat-sensitive recording layer provided on a paper support have been used for betting tickets, lottery tickets, computer passes, train tickets and the like. These materials, which form a recorded portion by thermal energy from a thermal head using a color-forming reaction between an electron-donating compound and an electron-accepting compound, are relatively inexpensive and can record information at high speed and with good print stability. However, there is a need to prevent modification and counterfeiting of the recorded materials. (Specification, paragraph bridging pages 1 and 2).

A conventional technique for preventing counterfeiting of such recording materials is to embed a tape-shaped security element in the paper support. However, this technique has the disadvantage that missing dots appear in the recorded images, especially in portions where a security element is embedded; production efficiency is low because wrinkles are formed when the materials are subjected to supercalendering; the surface where the security element is embedded is uneven; and when the recording materials are

rolled up, the resultant roll is corrugated. (Specification, paragraph bridging pages 2 and 3).

The present invention overcomes these problems by providing a recording material and paper support as recited in the claims on appeal in which the paper support has embedded therein, as a counterfeit prevention element, a ribbon-shaped security element, the ribbon-shaped security element and paper support satisfying certain specific size and positional relationships.

The recording material of the present invention in which the ribbon-shaped security element and paper support satisfy the specified size and positional relationships is free from quality degradation of recorded images, occurrence of wrinkles during production, uneven thickness on the surface of the recording material, occurrence of corrugations when rolled, and the like. (Specification, paragraph bridging pages 3 and 4).

Specifically, claims 1 and 20 of the present application require the paper support and ribbon-shaped security element embedded therein to satisfy the following limitations:

the distance from the front surface (on the recording layer side) of the paper support to the front surface (on the recording layer side) of the security element is 1 to 7 times the thickness of the security element;

the distance from the rear surface (the surface opposite the front surface) of the paper support to the rear surface (the surface opposite the front surface) of the security element is 0.5 to 6 times the thickness of the security element;

the thickness of the paper support is 4 times to 10 times the thickness of the ribbon-shaped security element;

the thickness of the paper support is 40 to 250 μm ; and
the ribbon-shaped security element has a width of 0.3 mm to 20 mm and a thickness of 10 μm to 40 μm ; and

The importance of specific size and positional relationships between the ribbon-shaped security element and the paper support is concretely described on page 12, line 2, to page 14, line 24, of the present specification. The effects achieved by these features, which cannot be reasonably expected from the prior art, are illustrated in the Examples of the present application (page 47, line 10, to page 54, line 9, and Table 1 of the specification).

(6) ISSUES

The primary issue to be decided by the Honorable Board of Patent Appeals and Interferences is whether the prior art and, particularly, the combined teachings of the Washburn et al.,

Isherwood et al., Kato et al. and Manser et al. references relied on by the Examiner, support a case of prima facie obviousness under 35 U.S.C. § 103(a) of the claims on appeal.

More specifically, the Board must decide (1) whether Washburn et al. can be properly modified as proposed in the final rejection, and (2) whether there was a sufficient reason, suggestion, teaching or motivation in the prior art to have modified the prior art as proposed in the final rejection.

(7) GROUPING OF CLAIMS

Claims 1, 6-14, 16, 19-20 and 25-33 stand or fall together.

(8) ARGUMENT

(A) WASHBURN ET AL. CAN NOT BE PROPERLY MODIFIED AS PROPOSED BY THE EXAMINER

Washburn et al., U.S. Patent No. 6,139,065 ("Washburn"), the primary reference relied on by the Examiner in the final rejection of the claims under 35 U.S.C. § 103(a), discloses a process for making security paper and security documents (such as bank notes, currency, checks, stock certificates and bonds) that comprises a step for applying a filament to a surface of a paper by rollers while applying pressure and heat, and imprinting a textured pattern into the filament.

In Washburn, the filament is not wholly embedded under the surface of the paper. The filament is pressed into the surface of the paper by calendering such that an upper surface of the filament is substantially coplanar with the surface of the paper or such that an upper surface of the filament remains raised above the surface of the paper. (Col. 2, lines 3-8).

The invention as described by Washburn is intended to avoid the cost of embedding a filament into the paper at the time the paper is manufactured. (See Col. 1, lines 44-47). In light of the fact that the invention of Washburn requires the filament to be remain on the surface of the security paper, Washburn cannot be properly modified to fully embed the security element below the surfaces of the paper as proposed by the Examiner. A prior art reference cannot be properly modified under 35 U.S.C. § 103(a) where the modification will destroy the invention on which the reference is based. See *Ex parte Hartmann*, 186 USPQ 366, 367 (Bd. App. 1974).

(B) THE EXAMINER HAS NOT SHOWN A LEGALLY SUFFICIENT REASON, TEACHING, SUGGESTION OR MOTIVATION IN THE PRIOR ART FOR MODIFYING WASHBURN AS PROPOSED IN THE FINAL ACTION

Washburn, as noted above, discloses a process for making security paper and security documents in which a filament is

pressed into the surface of a paper support by calendering. Washburn does not disclose the thickness of the paper or the dimensions of the filament before or after the calendering step. Washburn also does not disclose a recording paper having a heat-sensitive layer.

Isherwood et al., U.S. Patent No. 6,199,911 ("Isherwood"), is cited as teaching the coloring, coating, metallization and vapor deposition of metal onto a security element. The Examiner identifies Isherwood as disclosing a thread or security element having a width within the range recited in claim 20. The Examiner also states that the thickness of 10 to 80 microns of the security element is inherent in Isherwood because "width multiplied by width equals thickness." (??) (First sixteen lines of paragraph 4 on page 3 of the Action).

Kato et al., U.S. Patent Pub. No. 2003/0186810A1 ("Kato"), is cited as supporting the obviousness of providing a heat-sensitive recording layer on a paper support including an embedded security element.

Manser et al., U.S. Patent No. 5,525,400 ("Manser"), is cited as supporting the obviousness of providing an intermediate layer for paper and recording layers containing hollow organic particles as claimed in claim 19.

Where claimed subject matter has been rejected as obvious in view of a combination of prior art references, a proper analysis under § 103 requires, inter alia, consideration of whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process. See *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988).

Evidence showing that there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness is required. See, e.g., *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). Moreover, the showing of the requisite suggestion or motivation must be specific. See, e.g., *In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed"). (Emphasis added).

The Examiner has failed to make any particular findings as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected from Washburn, Isherwood, Kato and Manser, the components recited in the claims of the present

application for combination in the manner claimed. Broad, unsupported allegations of the Examiner are not particular findings. For this reason alone, the 35 U.S.C. § 103(a) rejections are improper and should be removed.

Moreover, for the reasons explained below, the prior art fails to provide the necessary reason, teaching, or suggestion to modify Washburn as proposed by the Examiner.

(a) An object of the present invention is to provide a recording paper that has an antifalsification property, high quality of recorded images free of missing dots on the surface of a recording layer at a security element portion, no wrinkles during production, no uneven thickness on the surface of the recording material, and no corrugation when rolled up, and that is easy to produce (page 3, lines 2 to 11 of the present specification). In order to achieve this object, as set forth in Claims 1 and 20, the present invention is characterized in that the sizes (dimensions, thickness, etc.) of the paper support and security element, and the positional relationship between the two, are specifically defined. The present inventors discovered that only when the paper support and the ribbon-shaped security element wholly embedded in the paper support have specific sizes and positional relationships, is the above object achieved.

(b) Washburn aims at providing security paper having security features to prevent illicit copying and forgery and reducing the manufacturing costs of the security paper. The filament of Washburn is pressed into the surface of the paper using a calendering roll in such a manner that it becomes coplanar with the surface of the paper or remains raised above the surface of the paper.

Washburn does not recognize the above-described object of the present invention and otherwise fails to provide any reason, teaching or suggestion to modify the security paper disclosed therein so as to satisfy the size and positional relationships between the security element (filament) and paper as required in the claims on appeal. As noted above, Washburn intends to avoid embedding the filament within the paper. Additionally, because the filament in Washburn is placed on the surface of the paper, the effects of the present invention, i.e., improving the quality of recorded image on the security element portion, and preventing wrinkles, uneven thickness and corrugation, cannot be achieved.

Moreover, Washburn does not intend to record images on the surface of the security paper having a filament embedded therein and there is no reason to provide a heat-sensitive recording layer on the paper.

(c) Isherwood aims at improving anti-counterfeitable qualities of security paper and discloses security paper comprising a security element that comprises a reflective metallic layer provided on a light transmitting polymeric substrate, the security element being wholly or partially embedded in the security paper. The Examiner asserts that Isherwood discloses the sizes of the ribbon-shaped security element and the paper support employed in the present invention, and that optimizing the thickness and thickness ratio is experimental modification for a person skilled in the art. These allegations are wrong.

Isherwood does not disclose the size and positional relationship between the security element and the paper support. Isherwood describes the width of the security element disclosed therein but fails to disclose its thickness. The Examiner states in the Action that the thickness of 10 to 80 microns of the security element of the present invention is inherent in Isherwood because "width multiplied by width equals thickness". (First sixteen lines of paragraph 4 on page 3 of the Action). This statement has no support in fact or logic.

Isherwood also fails to recognize the above-described object of the present invention and otherwise fails to provide a reason, teaching or suggestion to optimize the "thickness and thickness

ratio" of the security element and paper disclosed therein and, consequently, is clearly insufficient to provide a reason, teaching or suggestion to optimize the " thickness and thickness ratio" of the filament and paper of Washburn as alleged by the Examiner and as required to obtain the recording material and paper support of the present invention.

Furthermore, Isherwood does not intend to record images on the surface of the security paper having a filament embedded therein and does not disclose a heat-sensitive recording layer. Therefore, there is no suggestion or motivation provided by Isherwood (alone or in combination with other prior art or the knowledge generally available in the art) to provide such a recording layer on the security paper of Washburn.

(d) Kato, as noted above, is cited simply as supporting the teaching providing a heat-sensitive recording layer on a paper support including an embedded security element. Kato fails to provide any reason, teaching, suggestion or motivation to modify the size and position of the security element of the security paper of Washburn as required to obtain the recording material and paper support of the present invention.

(e) Manser is cited only as teaching an intermediate coating layer for paper and recording layers. Manser, similar to Kato,

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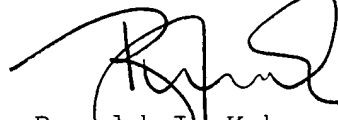
fails to provide any reason, teaching, suggestion or motivation to modify the size and position of the security element of the security paper of Washburn as required to obtain the recording material and paper support of the present invention.

For the above reasons, no combination of Washburn, Isherwood, Kato and Manser supports a case of *prima facie* obviousness under 35 U.S.C. § 103(a) of claims 1, 6-14, 16, 19, 20 and 25-33 of the application. Reversal of the Examiner's decision rejecting claims 1, 6-14, 16, 19, 20 and 25-33 is in order.

Please charge any fees required in connection with this brief or credit any overpayment to our Deposit Account No. 111833.

Respectfully submitted,

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APPENDIX

1. A recording paper comprising a paper support having a front surface and a rear surface opposite the front surface and a recording layer formed on the front surface of the paper support, the paper support having a ribbon-shaped security element embedded therein, the ribbon-shaped security element having a front surface facing the front surface of the paper support and a rear surface facing the rear surface of the paper support, and the recording paper being characterized in that:

the distance from the front surface of the paper support to the front surface of the security element is 1 to 7 times the thickness of the security element;

the distance from the rear surface of the paper support to the rear surface of the ribbon-shaped security element is 0.5 to 6 times the thickness of the security element;

the thickness of the paper support is 4 times to 10 times the thickness of the ribbon-shaped security element;

the thickness of the paper support is 40 to 250 μm ;

the ribbon-shaped security element has a width of 0.3 mm to 20 mm and a thickness of 10 μm to 40 μm ; and

the recording layer is a heat-sensitive recording layer comprising an electron-donating compound, an electron- accepting compound and a binder.

6. The recording paper according to claim 1, in which the

security element comprises a synthetic resin film and is a ribbon-shaped security element having a color different from that of the paper support.

7. The recording paper according to claim 1, in which the security element is a ribbon-shaped security element comprising a synthetic resin film provided with a vapor deposited metal layer on at least one side thereof, the paper support having a thickness of at least 3 times the total thickness of the vapor deposited metal layer and the synthetic resin film.

8. The recording paper according to claim 7, in which the vapor deposited metal layer is made of aluminum, copper, nickel, tin or zinc.

9. The recording paper according to claim 1, in which the security element is a ribbon-shaped security element comprising a synthetic resin film or a metallized synthetic resin film.

10. The recording paper according to claim 1, in which the security element has an adhesive layer comprising an adhesive as a main component on at least part of its surface.

11. The recording paper according to claim 10, in which the

adhesive layer adheres to the paper support by contact of the adhesive layer and water when the security element having the adhesive layer is embedded within the paper support during paper making, or by the heat applied when the paper is dried after production, or by the pressure applied during supercalendering.

12. The recording paper according to claim 10, in which the adhesive is a polyester resin-based adhesive, a urethane resin-based adhesive, an acrylic resin-based adhesive or a vinyl acetate resin-based adhesive.

13. The recording paper according to claim 10, in which the adhesive layer further comprises at least one member selected from the group consisting of a fluorescent dye, a fluorescent pigment and a luminescent pigment.

14. The recording paper according to claim 10, in which the adhesive layer is prepared by uniformly dispersing an adhesive, and if desired at least one member selected from the group consisting of a fluorescent dye, a fluorescent pigment and a luminescent pigment, in water or an organic solvent serving as a medium to obtain a coating composition for forming an adhesive layer, applying the resulting coating composition to the ribbon-shaped security element in an amount of about 1 g/m² to about 10 g/m² on

a dry weight basis, and drying the resulting coating.

16. The recording paper according to claim 1, in which a protective layer containing a binder having a film forming ability is formed on the heat-sensitive recording layer.

19. The recording paper according to claim 1, wherein an intermediate layer containing a pigment or hollow organic particles is provided between the paper support and the recording layer.

20. A paper support for a recording paper, the paper support having a front surface and a rear surface opposite the front surface and having a ribbon-shaped security element embedded therein, the ribbon-shaped security element having a front surface facing the front surface of the paper support and a rear surface facing the rear surface of the paper support, and the recording paper being characterized in that:

the distance from the front surface of the paper support to the front surface of the security element is 1 to 7 times the thickness of the security element;

the distance from the rear surface of the paper support to the rear surface of the ribbon-shaped security element is 0.5 to 6 times the thickness of the security element;

the thickness of the paper support is 4 times to 10 times the

thickness of the ribbon-shaped security element;

the thickness of the paper support is 40 to 250 μ m; and

the ribbon-shaped security element has a width of 0.3 mm to 20 mm and a thickness of 10 μ m to 40 μ m.

25. The paper support according to claim 20, in which the security element comprises a synthetic resin film and is a ribbon-shaped security element having a color different from that of the paper support.

26. The paper support according to claim 20, in which the security element is a ribbon-shaped security element comprising a synthetic resin film provided with a vapor deposited metal layer on at least one side thereof, the paper support having a thickness of at least 3 times the total thickness of the vapor deposited metal layer and the synthetic resin film.

27. The paper support according to claim 26, in which the vapor deposited metal layer is made of aluminum, copper, nickel, tin or zinc.

28. The paper support according to claim 20, in which the security element is a ribbon-shaped security element comprising a synthetic resin film or a metallized synthetic resin film.

29. The paper support according to claim 20, in which the security element has an adhesive layer comprising an adhesive as a main component on at least part of its surface.

30. The paper support according to claim 29, in which the adhesive layer adheres to the paper support by contact of the adhesive layer and water when the security element having the adhesive layer is embedded within the paper support, or by the heat applied when the paper is dried after production, or by the pressure applied during supercalendering.

31. The paper support according to claim 29, in which the adhesive is a polyester resin-based adhesive, a urethane resin-based adhesive, an acrylic resin-based adhesive or a vinyl acetate resin-based adhesive.

32. The paper support according to claim 29, in which the adhesive layer further comprises at least one member selected from the group consisting of a fluorescent dye, a fluorescent pigment and a luminescent pigment.

33. The paper support according to claim 29, in which the adhesive layer is prepared by uniformly dispersing an adhesive, and if desired at least one member selected from the group consisting

of a fluorescent dye, a fluorescent pigment and a luminescent pigment, in water or an organic solvent serving as a medium to obtain a coating composition for forming an adhesive layer, applying the resulting coating composition to the ribbon-shaped security element in an amount of about 1 g/m² to about 10 g/m² on a dry weight basis, and drying the resulting coating.